

1 VQE results Aer Estimator (With Shots)

			(Full Hamiltonian)	Anharmonic Oscillator		$\Lambda = 16$	COYBLA Max 10k Iterations				
Ansatz	Tolerance	Shots	Converged runs	Mean iter	VQE min E.	σ_{min}	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time
RA r1 rl	1e-01	10000	100/100	47	-2.3496e+01	1.2972e+01	-2.3494e+01	6.5152e+01	6.5153e+01	-1.167e-03	01h 17m 32s
RA r1 rl	1e-02	10000	100/100	64	-1.6865e+01	1.5872e+01	-1.6864e+01	5.3711e+01	5.3712e+01	-	01h 25m 20s
RA r1 rl	1e-03	10000	100/100	82	-2.6379e+01	1.4849e+01	-2.6377e+01	5.1249e+01	5.125e+01	-	01h 45m 43s
RA r1 rl	1e-04	10000	100/100	103	-1.0585e+01	1.4368e+01	-1.0584e+01	5.751e+01	5.7511e+01	-	02h 01m 10s
RA r1 rl	1e-05	10000	100/100	117	-1.0389e+01	1.4146e+01	-1.0388e+01	6.1163e+01	6.1164e+01	-	01h 54m 38s
RA r1 rl	1e-06	10000	100/100	133	8.2664e-01	1.2583e+01	8.278e-01	6.7538e+01	6.7539e+01	-	02h 44m 06s
RA r1 rl	1e-07	10000	100/100	153	-1.027e+01	1.5101e+01	-1.0269e+01	5.1566e+01	5.1567e+01	-	02h 28m 19s
RA r1 rl	1e-08	10000	100/100	169	-1.6824e+01	1.3618e+01	-1.6823e+01	6.5002e+01	6.5003e+01	-	02h 42m 55s
Ansatz	Tolerance	Shots	Converged runs	Mean iter	VQE min E.	σ_{min}	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time

Table 1